UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D. C.

THE EXTENSION POULTRY HUSBANDMAN

Issued by the Bureau of Animal Industry and the
Extension Service, Cooperating,
H. L. Shrader, Senior Extension Poultry Husbandman.

Serial No. 10 -- --December 1940

Contents

SOME ESSENTIALS OF A GOOD EXTENSION SPECIALIST

By J. E. Humphrey, Extension Poultry Husbandman,
University of Kentucky.

- - - -

1. Be prepared. One should be well grounded in the fundamentals of his subject and then should keep up-to-date. County agents expect a specialist to do this because they are too busy to keep up with new developments in all lines of endeavor.

2. Have a plan of work. Make definite plans and then work your plans. I know what it is to work up a set of plans and then have them rejected. It takes time and patience to arrange plans that will please all parties concerned. Plans, however, are essential for the carrying on of a well-rounded program. If we didn't have definite plans or a program to guide us we would be like a ship captain at sea without his compass.

3. Be sincere, honest, and prompt. Take your work seriously, but have a sense of humor. Don't put on but be natural. However, if you find yourself weak in some point, correct it as soon as you can. This can be done by emulating some successful person who is strong in this respect. Practice until you have overcome this weakness and made it a part of your life. The old adage of "Honesty is the best policy" cannot be overemphasized. Since many people are late for engagements, one can become renowned by always being on time. Neither put off until tomorrow what you should do today.

4. Keep all engagements and never complain about the work outlined by county agents. Never make an engagement unless you are going to make every possible effort to fill it. Nothing will hurt you more than falling down on your promises. I can best explain what I mean by telling you a story about two specialists I know. This is a true story told by one of our Kentucky county agents to his State agent. "Specialist So and So always keeps his appointments and when he comes to my county he is ready to go wherever I suggest and to do his utmost to help put the job over. He is congenial, happy, and well liked by my farmers. It is not this way with a certain other specialist who on several occasions has called me the day before and cancelled his engagements, or if he did come, after finding out my plans he would say, 'What is the use of going over there? Nobody will be out on this rainy day. Anyway, that is just a little job and won't amount to much.' Then, too, he usually talks about what the big fellows are doing and doesn't seem interested in helping to solve the problems of the average farmer."

5. Be a diplomat. This doesn't mean you always have to be a "yes man" and agree with everybody. However, if you need to say no, do it in such a manner that the opposition will realize your sincerity and present such arguments as will gain your point. By so doing you will soon have them thinking your way if you are right. Don't be afraid to rejoice when it is necessary or weep when this seems proper. Show interest in helping county agents, farmers, and poultrymen to solve their problems. Speak in language they can understand. By all means don't talk over their heads.

6. Last but not least, be a Christian gentleman. This doesn't mean you are to be a religious fanatic or a sissy. However, it is a wonderful asset for one to possess if you can have it said of you, "There is a man who is a Christian gentleman and who can be depended upon to do what he tells you he will do". If this can be said of you, then you will be a person who regularly attends church and takes part in all phases of worthwhile work and serves his community, State, and nation in time of need financially and otherwise.

----------oOo----------

WORLD'S POULTRY CONGRESS REPORTS

A final report on the Seventh World's Poultry Congress was issued in a 24-page leaflet by the General Executive Board. The report gives a resume of activities together with a list of the 38 countries that were represented by 109 official delegates. The estimated total attendance is given as 850,500 while the scientific session for full Congress members had an estimated attendance of 2,235. For the popular program the figure for the morning session was estimated at 15,000 and the afternoon conference period added 2,400. The transparent kitchen was seen by more than 25,000 people.

In the youth program 27,000 participated with 6,000 of them in the organized activities. A total of 1,737 different individuals from 36 States took advantage of the youth camping facilities. Between 4,000 and 5,000 people attended the motion picture program.

The report also explains how the Congress was financed, where the money was spent, and the membership sales by States.

Lists of the Cleveland underwriters, also the buyers of exhibit space and the contributing members are given. Special mention is made of the cooperation from the press and radio, the consumer education program, and entertainment features.

The statement of the income and expense shows a total income of $313,737.95 and an expense of $309,970.74 with a net income of $3,767.21.

----------oOo----------

(At the risk of being called a Chamber of Commerce promoter, I am including in The Extension Poultry Husbandman a section of the "Statement of Situation" found in the 1940 plan of work submitted by South Carolina. The idea of giving a picture of the allied poultry industries in the State is one that would greatly improve similar statements from other States. --H.L.S.)

ALLIED POULTRY INDUSTRIES

The hatchery and feed industries are so closely associated and tied up with the poultry industry that they could well be considered a part of it.

There are 78 hatcheries in the State with a total incubating capacity of 1,897,000 eggs at one setting. These hatcheries pay approximately $250,000, a quarter of a million dollars, to flock owners for hatching eggs each year. A conservative estimate of the money invested in incubators and hatchery equipment is approximately a quarter of a million dollars. About 200 people make their livelihood working in these hatcheries.

Judging from a questionnaire received from feed mills it seems that about 1,000 people are making their livelihood working in feed mills of the State and that about 50 percent of the business of most of these mills is poultry feed. The money invested in these mills would probably be well above a million dollars.

A questionnaire sent to people who are familiar with the poultry industry of the State indicate that about 50 people are employed travelling through the State selling feed to retail dealers, and that about 75 percent of the business of these salesmen is poultry feed. The same questionnaire indicates that about 300 people make their living as hucksters and that about 60 percent of their business is buying and selling poultry and eggs.

In addition to this, there are thousands of retail feed stores, and in most cases poultry feed is the major portion of their business. These stores also handle thousands of dollars worth of equipment. The use of electric brooders and other electric equipment helps to keep the wheels of the industry turning as many people are furnished employment in making this equipment as well as the people who are employed in generating and distributing electric current.

The lumber used in constructing poultry buildings throughout the State amounts to millions and millionsof feet and keeps the sawmill industry working a number of employees that it could not work otherwise. Carload after carload of pulpwood is utilized in egg cartons and baby chick boxes.

Cottonseed meal used in poultry feeds, cottonseed hulls used for litter, and cloth used for feed bags give the cotton grower another avenue for disposing of his products and play a small part in supporting the cotton industry.

All classes of poultry consume about 7,000,000 bushels of corn annually which is a big portion of the 26,288,000 bushels produced in South Carolina in 1938. They consume about 1,750,000 bushels of wheat, which is just about the amount produced (1,771,000 bushels) in 1938 in South Carolina.

----------oOo----------

Mr. Clyde Rowe, poultry specialist in Arizona, is a great believer in getting chicks hatched near home. Each year in his chick livability studies he separates "Out of State" hatched chicks from Arizona hatched chicks. The 1939 annual report gives the following table.

Chick Livability Report

Source of chicks	No. flocks	No. chicks purchased	Percent lost up to 6 weeks
Out of State*		2,625	16.9
Arizona		49,748	6.9
Total	95	52,373	7.3

*Colorado, Missouri, Oklahoma, Texas.

Twenty of Arizona's 24 hatcheries are cooperating in the National Poultry Improvement Plan. These hatcheries represent more than 90 percent of the total hatching capacity of the State. There were 242 breeding flocks involving 53,332 birds blood-tested for pullorum disease. Only 1.6 percent of the birds reacted which was an increase of 0.2 percent over the previous year, 51 percent of all flocks tested showed no reactors.

With a quality program like that in active operation in the State it is little wonder that outside shipments of chicks have stiff competition.

----------oOo----------

It has been suggested, in view of the great shortage of aluminum, that poultry farmers who have made a practice of ringing their birds and who have quantities of discarded rings should forward these to the local Anti-Waste Committee in their respective areas. (South Africa Poultry Association Bulletin)

----------oOo----------

CHICKEN PIES

"Pop" O'Brien of Dennisport has become known the length and breadth of this land through chicken pies which he sells on Cape Cod. Born of the depression, pie making has grown into a real business for this genial old Irishman - and a profitable one too.

It was in 1933 that the decision was reached that something had to be done. Live or dressed hens were bought by the pound and 75¢, with considerable wrangling, was an average price for a Rhode Island Red hen. In a pie, the same hen would bring $3.50 to $4.00 and without quibbling about price.

On one bright sunny morning in July, 1933 the first lot of pies were sold from a wheelbarrow on the streets of Dennisport. This soon grew to a business of 200 a week that summer and with a total figure of 10,000 pies since the business was started. Last summer in 10 short weeks Mr. O'Brien did $2,500 worth of chicken pie business and in addition sold 1,500 blueberry pies and hundreds of chicken sandwiches and coffee and doughnuts.

The best chicken for pies is a hen that weighs about 7 pounds. Such a bird will make 8 to 10 small six-inch pies which sell for 40 cents. The dressed chicken is cut up as for stewing and cooked in a kettle. First, two onions for each chicken are cut up finely and placed in the bottom of the pan. Other seasoning consists of salt, pepper, celery salt and poultry seasoning. Then the chicken is added and lastly water to cover it. Cooking time is 2 to 7 hours depending upon the age of the birds. The meat must come off the bones easily but it must not be cooked too long.

Much of the popularity of "Pop's" pies is due to the crust. The recipe for the dough is as follows:

1 cup lard or equal parts lard and chicken fat
6 cups flour
2 heaping teaspoonfuls baking powder
1 cup water

The shortening is cut very fine with a wire shortening cutter and worked evenly into the mixture. The dough is handled just as little as possible.

After placing the lower pie crust in the pan, it is filled with the cooked chicken and the yellow gravy. Then comes the pie crust cover and last the painting of it with an egg yellow mixture. This contains egg and sugar which gives the top of the crust a golden brown in the 10 minutes of baking at 500 degrees. The deep yellow color of the gravy is obtained by the addition of yellow coloring matter.

The small 6-inch pies serve 2 persons and sell for 40 cents. These are placed between paper plates and in a paper bag for the customer. A 9-inch pie serves 5 persons and sells for $1.10 including a 10-cent refund on the tin that it is baked in. --G. T. Klein, June '40, Featheredfax.

----------oOo----------

CALIFORNIA CHICKEN MANURE STANDARDS

As a result of a conference called at the behest of the fertilizer industry the State Bureau of Chemistry was requested to work out standards for the sale of chicken manure. The following proposed schedule of terms, grades, and characteristics was adopted, as reported by Dr. Alvin J. Cox in Bureau of Chemistry Announcement No. 48, Nov. 27, 1939:

California Grades of Chicken Manure

(a) California Grade No. 1 Chicken Manure--Nitrogen, not less than 2 percent, moisture, not more than 20 percent. There shall be 0.5 percent increase in nitrogen for each 5 percent or fraction thereof increase in moisture over 20 percent.

(b) California Grade No. 2 Chicken Manure--Nitrogen, not less than 1.25 percent, moisture, not more than 40 percent (no sliding scale).

(c) California Grade Chicken Litter--Nitrogen, not less than 2 percent (regardless of moisture content).

(d) California Grade Common Chicken Manure--Nitrogen, not less than 1 percent (regardless of moisture content).

(e) California Grade Chicken Trash--Poultry waste materials which do not meet the specifications of either (a), (b), (c), or (d).

(f) Supplementary Provisions.

(1) Any of the foregoing California grades of chicken manure may contain litter materials used for bedding or feeding purposes, or for the preservation of manure, provided the composition of the mixture conforms to the analysis required for the respective California grade.

(2) Chicken litter containing 1 percent or more of nitrogen, may be sold as California grade common chicken manure.

(3) The seller of any of the foregoing commodities, (a), (b), (c), (d), or (e), will be held responsible for the maintenance of any additional guarantee which he may make concerning it.

(From Pacific Rural Press, 2/10/40.

----------oOo----------

NORTH CAROLINA
COSTS OF PRODUCING BROILERS, TYPE OF EQUIPMENT
COMPARISON (4-H AND ADULT COOPERATORS), 1939

Item	Data for broilers brooded with -- Brick or rock furnaces	Electric brooders	Oil brooders	Wood-burning brooders	Coal brooders
No. chicks started	5,888	2397	2379	1308	805
No. chicks sold	5,357	2199	2205	1218	738
Average number chicks brooded	5,622	2298	2292	1263	771
Mortality, percent	9.02	8.26	7.31	6.88	8.32
Mash consumed per chick brooded, pounds	6.23	8.25	5.72	6.36	5.76
Grain consumed per chick brooded, pounds	1.95	1.39	1.86	2.65	2.74
Total feed consumed per chick brooded, pounds	8.19	9.63	7.59	9.01	8.51
Average weight at selling time, pounds	2.37	2.037	2.225	2.40	2.72
Chick cost per lb. sold, dollars	0.037	0.044	0.039	0.037	0.035
Feed cost per lb. sold, dollars	0.084	0.124	0.083	0.086	0.075
Fuel Cost per lb. sold, dollars	0.006	0.008	0.010	0.003	0.007
*Miscellaneous costs per lb. sold, dollars	0.003	0.004	0.005	0.002	0.001
Chick, feed, fuel and misc. cost per lb. sold, dollars	0.131	0.181	0.138	0.127	0.118
Chick, feed, fuel and misc. costs per chick, dollars .	0.296	0.353	0.295	0.295	0.307
Av. price received per lb., dollars	0.201	0.215	0.220	0.187	0.187
Return above cost shown per chick brooded, dollars ...	0.159	0.071	0.176	0.138	0.181
Return above cost shown per lb. sold, dollars	0.070	0.036	0.082	0.060	0.069

*Miscellaneous costs include litter, medicine, disinfectants, etc.

---oOo---

A penny hires an expert - if you use it to buy a post card and write the Tennessee Agricultural Extension Service, Knoxville, for free publications on farm and home improvement. They may also be obtained from county, farm, and home agents. -- Elliott, Tennessee Press Release

---oOo---

NORTH CAROLINA
COSTS OF PRODUCTING BROILERS (By Breeds)
(4-H AND ADULT COOPERATORS), 1939

Item	**All Chicks	Data for --- Barred Rock	New Hampshire
No. chicks started	13,558	9,378	2,702
No. chicks sold	12,384	8,516	2,561
Average number chicks brooded	12,971	8,947	2,631
Mortality percent	8.6	9.19	5.22
Mash consumed per chick brooded, pounds	6.44	6.33	7.43
Grain consumed per chick brooded, pounds	1.99	1.98	1.59
Total feed consumed per chick brooded, pounds	8.43	8.31	9.02
Average weight at selling time - pounds	2.32	2.28	2.39
Chick cost per lb. sold, dollars	0.038	0.039	0.037
Fuel cost per lb. sold, dollars	0.007	0.007	0.005
*Miscellaneous costs per lb. sold, dollars	0.003	0.003	0.003
Chick, feed, fuel and misc. cost per lb. sold, dollars	0.137	0.140	0.133
Chick, feed, fuel and miscellaneous cost per chick brooded, dollars	0.305	0.304	0.309
Av. price received per lb., dollars	0.203	0.201	0.212
Return above cost shown per chick brooded, dollars	0.146	0.134	0.185
Return above cost per lb. sold, dollars	0.066	0.062	0.079

* Miscellaneous costs include litter, medicine, disinfectants, etc.
** In some cases, two or more breeds were brooded together.

----------oOo----------

POULTRY SPECIALISTS ON A.P.A. COMMITTEE

The American Poultry Association at its 66th annual convention created a committee on "Education and Statistics". H. G. Ware, poultry specialist in Oklahoma was named as chairman. Other members of the committee, which include several extension workers, are O. A. Barton, R. C. Ogle, J. H. Redditt, Andrew Stodel, Alex. Warren and M. Heiner.

----------oOo----------

DELAWARE BROILER SURVEY

A summary of records submitted during 1939 by 99 broiler growers on nearly 600,000 birds and summarized by the Extension Service shows:

1. Average length of time fed ..... 14 weeks
2. Average mortality from all causes ..... 10 percent
3. Average weight of broilers sold ..... 2.94 lbs.
4. Average cost per pound sold ..... 14.5 cents
5. Average price received per pound sold ... 16.2 cents
6. Average net profit per pound sold ..... 1.7 cents
7. Average labor returns per week per 1,000 chicks purchased
   (a) Twenty-five high records ..... $ 11.45
   (b) Twenty-five low records ..... $ 1.94
   (c) All lots ..... $ 4.87

This study indicates the principal factors which influence profits to be (1) mortality, (2) length of time fed, (3) weight of broilers when sold, (4) cost of feed per cwt., and (5) the price received per pound. Of the above factors, those within the control of the producer are (1), (2), and (3), and only partially (4) and (5).

As the feeding period is lengthened, there are a gradual increase in the percent mortality, a decrease in labor returns, and an in increase in the pounds of feed per pound of gain.

The price of the feed used appeared not to be the determining factor in the cost of producing a pound of broiler; also a positive correlation between the kind of feed fed and the mortality was found.

The larger amounts of feed space per chick indicated a lower feed consumption per pound of broiler and an increased return per week per 1,000 chicks purchased.

Locally hatched chicks appeared superior in nearly all departments to those shipped long distances from out-of-State hatcheries.

A reduced number of chicks per stove tended to reduce mortality, increase the weight when sold, and shorten the growing period. Floor space per stove had a slightly similar effect.

As floow space per chick purchased was increased, a slightly shorter feeding period was indicated; also a lower cost of production per pound of broiler.

Area differences were plainly indicated. For example, in one

area a 3.1 pound broiler was produced in 13.1 weeks, while in Baltimore Hundred* it took 14.9 weeks to produce a 2.8 pound broiler. Returns per week per 1,000 chicks were $3.32 in the Laurel area and $5.91 in the Seaford area.

The month broilers are sold appears to be a factor. Costs per pound were lowest for May sales; returns per 1,000 chicks purchased were highest for June and July sales, while the lowest returns per 1,000 chicks were during December, January, and February.

* A Hundred in Delaware is a subdivision of the county. Example: Township.

----------oOo----------

In Alabama, Mr. John Ivey, poultry specialist, is making effective use of a 5 x 8 card which is placed in a neat metal holder in the chicken house. This card is to be signed each month by the extension worker who visits the farm. On this card are listed various items so that the demonstrator can see where improvement is needed. These items cover the following field:

HOUSE PARASITES AND DISEASES MANAGEMENT

Under these various items brief suggestions are made. This serves as a help in training the extension workers who visit the farm to make systematic observations and it helps to keep the poultry flock demonstrator on his toes.

A red-colored card of the same size is also supplied in each holder. This card contains the following paragraph:

"NOTICE:"

"Sorry you were not at home so I could discuss the several items with you. Please give immediate attention to those items marked on your monthly sheet. If not thoroughly clear please contact me at your convenience. Hope I shall be able to see you on my next trip."

Thus, we see he has made provision for the absentee visit as this so often happens in the case of farm flocks.

This card system has apparently been quite effective in keeping the farm flock demonstrator in touch with the extension worker.

----------oOo----------

SUMMARY OF REPORTS ON DEMONSTRATION FARM FLOCKS 1938-39[1/][2/]
(As furnished by 30 States)

State	Farms	Average size of flock	Eggs per hen	Mortality	Feed cost per hen	Income per hen Total	Income per hen Net	Feed cost per doz. eggs	Selling price per doz. eggs
	Number	Number	Number	Percent	Dollars	Dollars	Dollars	Cents	Cents
Alabama	268	189	170	----	1.66	3.20	----	----	23
Arkansas	21	118	141						16.8
California[3/]	33	1311	161	21.1	1.93	3.67	1.11[4/]	----	24.2
Connecticut	111	717	185	----	----	----	----	----	----
Florida	27	465	159	----	----	----	----	----	----
Georgia	40	---	167	19.2	----	3.95	----	----	----
Illinois	247	135	134	----	----	3.20	----	----	18
Indiana	70	257	163	15.0	1.79	----	1.11[4/]	----	21
Iowa	21	295	139	21.0	.96	2.28	1.01[4/]	----	17
Kansas	409	167	151	----	----	----	----	----	----
Kentucky	73	122	177	----	----	----	----	----	----
Maryland	56	319	152	15.8	----	----	----	----	----
Minnesota	60	273	160	17.5	----	----	----	----	18.5
Mississippi	188	89	142	----	1.33	----	----	8.4	----
Missouri									
(Farm flocks)	175	169	152	----	1.42	2.80	----	11.6	12
(Comm. flocks)	18	534	174	----	1.46	2.94	----	11.0	17.7
Montana	57	230	175	17.4	1.21	----	1.68[4/]	9.0	23.0
Nebraska	19	341	170	15.9	1.49	3.41	1.66[4/]	----	18.0
New Hampshire	172	544	181	12.9					
New Jersey	24	---	---	----	1.64	----	1.83[5/]	12.6	26.8
(Pullet flocks)	---	318	170	----	----	----	----	----	----
(Hen flocks)	---	252	131	----	----	----	----	----	----
New Mexico	31	152	136	21.0	1.70[6/]	3.69	1.34	----	26
North Carolina	359	184	168	----	1.72	----	----	12.3	25.6
Oklahoma	38	172	148	----	1.09	----	----	----	----
Rhode Island	44	954	167	7.1	----	----	----	----	----
South Carolina	109	154	152	19.0	2.03[6/]	4.09	1.77	----	25.5
Tennessee	56	93	137	----	1.86	----	.88[5/]	----	----
Texas	---	---	165	16.7	1.45	----	1.27[5/]	10.8	20.4
Utah	78	625	157	30.0	----	----	----	----	----
Virginia	24	226	160	----	----	----	----	----	----
West Virginia	---	120	184	----	1.52	----	----	12.9	23.2
Wisconsin	---	208	166	----	----	----	----	9.3	19.0

1/ Records were submitted for the flock year beginning in November 1938 and ending in October 1939 by the following States: Ala., Conn., Fla., Ga., Ind., Kans., Miss., Mont., N.H., N.J., N.Mex., N.C., S.C., Utah, and Wis.

2/ Records were submitted for the flock year beginning in October 1938 and ending in September 1939 by the following States: Calif., Iowa, Md., Minn., Mo., Nebr., Tex., Va., and W.Va.

3/ For Los Angeles County

4/ Labor Income 5/ Income over feed cost 6/ Includes chick feed

---oOo---

PUBLIC REACTION TO SMOKED TURKEY

At an exhibit in the patio of the Department of Agriculture in Washington, the public was given an opportunity to taste and comment on small samples of roast smoked turkey, cured by the Bureau of Animal Industry and cooked by the Bureau of Home Economics. The reaction was as follows:

Liked it very much	138
Satisfactory, but not especially liked	64
Disliked	5
Total	207

Of various comments made, the following are noteworthy:

> Very nice as a cured product but for me it does not take the place, or compare favorably, with fresh turkey. Tastes quite similar to cooked cured smoked ham. --W.C.H.
>
> Very tasty. More of an appetizer than entree. I prefer unadulterated TURKEY taste. Has "ham" taste. --J.R.C.

Twenty-six persons reported that it tasted like ham, several mentioning finer grain. To six it resembled tongue; to three, Canadian bacon; one, mackerel; one, chicken; one, spiced beef; one, smoked mutton. Miscellaneous comments mentioned "very tender", "raw taste", and "too salty." Most persons preferred the white meat to the dark.

----------oOo----------

High egg quality during the hot summer season can be assured by frequent gathering of the eggs and immediate cooling under high humidity conditions. Reduced temperatures and high humidity are obtainable on any poultry plant without refrigeration at low cost. Quick cooling is most readily accomplished by placing the wire egg gathering baskets through suitable holes in a covered box. The box is made long enough to accommodate the required number of pails for a day's production. A fan at the end of the box, fitted with a metal sleeve to direct air movement, provides the necessary ventilation for cooling. Moisture can be added by fitting a separate short box section behind the fan with cloth drip sheets or with a 3-inch thick partition of excelsior held in place with mesh wire and wet by means of a pipe drip. Crate shortage of eggs after transfer from pails should also be in a cabinet or partitioned room which is kept moist with drip sheets or excelsior pads. Occasional fan ventilation of this cabinet or room is desirable. --N. J. Engineering News Notes.

----------oOo----------

SUMMARY OF VITAMINS IN THE NUTRITION OF POULTRY

Factor	Results of deficiency
VITAMIN A Pale yellow crystals; fat soluble. CAROTENE PIGMENTS Orange-red substances converted to vitamin A in the body.	Stunted growth; diminished egg production; accumulation of urates in the ureters, urate nodules in the lining of the esophagus.
THIAMIN (VITAMIN B_1) White crystalline substance; water soluble.	Lack of appetite; stunted growth head retraction and eventually death.
RIBOFLAVIN (VITAMIN G) An orange - yellow, crystalline substance, soluble in water.	Slow growth and "curly-toe paralysis" in chicks. Dermatitis in young turkeys (but not in chicks). Egg production and hatchability lowered.
VITAMIN D There are several forms of vitamin D. The form that is used most efficiently by poultry is designated as vitamin D_3. This form is the natural vitamin D of fish-liver oils; also, it has been obtained by irradiating 7-dehydrocholesterol.	Growing chicks develop rickets (leg weakness). Egg production and hatchability are lowered. Eggs have thin shells.

	Probable practical requirements	Sources: Common feedstuffs	Sources: Special concentrates
Vitamin A	Chicks--1,450 I.U. (or U.S.P.) units per pound of total feed. Laying hens--3,150 U.S.P. units daily per pound of feed. Breeding stock--turkeys, chicks - 4,720 I.U. per pound of feed. Young turkeys--Requirements are about 2½ times those of chicks.	Good-Green pasture, green leafy legume hay, alfalfa meal (artificially cured better than sun-cured), legume silage. Fair--Grass hay, corn silage, dried liver, whole milk, yellow corn. Poor--Poor quality hay, grains and their products (except yellow corn), buttermilk.	High vitamin A fish oils. Cod-liver oil. Cod-liver oil concentrates. Carotene concentrates. Dried cereal grasses.
Vitamin B_1	Chicks and laying birds--180 International Units per pound of total feed.	Good--Whole grains and their products, peanuts, soybeans, molasses. Fair--Potatoes, milk (whole and skim), cabbage, hay, pasture. Poor--Beets and beet pulp, fish meal, meat scrap, tankage, grain products which do not include germ or bran.	Dry brewer's yeast. Wheat germ. Synthetic vitamin B_1.
Vitamin G	Breeding stock--1250 Chicks--1670 micrograms per pound of total feed. Laying birds--680 micrograms per pound of feed. Young ducks--about the same as chicks. Poults--slightly more than chicks.	Good--Dried liver, dry brewer's yeast, dry milk products. Fair-Alfalfa, white fish meal. Poor - Grains and grasses.	Concentrates made from liver, yeast, milk and residues from fermentation. Crystalline riboflavin.
Vitamin D	Chicks--180 A.O.A.C. chick units per pound of total feed. Laying birds--360 to 450 A.O.A.C. chick units per pound. Breeding stock--540 A.O.A.C. chick units per pound. Young turkeys--twice as much as chicks.	Good--Some types of fish meal. Fair--Timothy hay, prairie hay, sun-cured legume hay, corn silage, certain types of fish meals, whole milk. Poor--Poor quality hay, artificially cured hay.	Fish oils. Activated 7-dehydrocholesterol.

SUMMARY (Continued)

Factor	Results of deficiency
PANTOTHENIC ACID White crystalline substance, water soluble.	Dermatosis in chickens, (sores in corners of mouth and eyes). Egg production and hatchability lowered.
VITAMIN E Several substances have vitamin E activity. The best known is alpha tocopherol, a viscous, nearly colorless oil.	Embryonic mortality; degeneration of the testes in male birds.
VITAMIN K Several fat-soluble compounds, derivatives of quinone or naphthoquinone, possess vitamin K activity.	Vitamin K deficiency, as observed in chicks, ducklings, and young geese, is characterized by an enormously prolonged blood clotting time and by subcutaneous and intramuscular hemorrhages which eventually result in anemia, followed by death.

----------oOo----------

MA OR THE HEN?

"The coal oil light is burning bright,
It will, sometimes, when it feels just right;
Pa sits there reading, slick as sin,
The latest poultry bulletin.
Then half to Ma and half to me
Pa up and speaks, 'I see,' says he,
'As how the right illumination
Will make hens lay like all creation.
I've got the price, the help is hired,
I guess I'll have the hen house wired,'
Ma stoops and peers and sews away
Does Ma, and then I hear her say:
'I wish I was a blamed old hen,
Maybe he'd wire the homestead then.'"

H.D.A. News--Mississippi

----------oOo----------

SUMMARY (Continued)

	Probable Practical Requirements	Sources: Common Feedstuffs	Sources: Special Concentrates
Pantothenic Acid	Chicks--6 to 7 milligrams per pound of total feed. Laying birds--same as for chicks. Breeding stock--6.5 to 7.5 milligrams per pound of total feed.	Good--Yeast, dried liver, some lots of cane molasses, dried whey, peanut meal, dried buttermilk and skim milk, alfalfa leaf meal. Fair--Cereal grains Poor--Fish meal, meat scrap, and tankage.	Dried brewer's yeast. Crystalline calcium pantothenate.
Vitamin E	No experimental data.	Good--Wheat germ meal, wheat shorts and midlings, alfalfa leaf meal.	Wheat germ oil. Wheat germ.
Vitamin K	No experimental data. For chicks, one-half microgram of methyl naphthoquinone daily furnishes complete protection, but this is not necessarily the minimal requirement.	Good--Green, leafy vegetables, alfalfa. Fair--Pig liver, silage, egg yolk. Poor--Milk vegetable oils, cereals.	Synthetic Concentrates prepared from alfalfa, spinach, grass and other sources.

Vitamin D Digest, Vol. 2, No. 6,
U.S.D.A. Yearbook 1939, pp. 787-843.

----------oOo----------

Prof. Homer Stuart, head of the poultry husbandry department, has been named acting director of extension and acting dean of the School of Agriculture. He relieves President Bressler, whose temporary service since last August was the most efficient expedient as an interim appointment.

Mr. Stuart, a graduate of the Pennsylvania State College and the University of New Hampshire, has made the Rhode Island egg-laying contest one of the best in the country, and his constructive efforts in building up the State's poultry industry rank is second among Rhode Island agricultural enterprises.

----------oOo----------

MERCHANDISING CUT-UP POULTRY

They're selling chickens by the piece now! People can buy breasts, drumsticks, wings -- or any part they want. It may sound ridiculous. But wherever chicken is being sold cut-up, they're selling two or three times as much as they did before, which should be good news to anyone raising poultry.

There are six stores in Chicago where they sell nothing but chicken. They will sell the birds whole if people want them that way, but most people prefer to buy the parts they like best. One group of stores in Chicago has featured cut-up chickens in their newspaper ads for the last four week-ends. They did more business in the middle of August than they did last Thanksgiving and they think it was mostly because so many people came in for cut-up chicken!

A hand bill I saw the other day said, "When you're hungry for a pork chop, you don't buy a hog! Why buy a whole chicken when it's breast of chicken you want?" People who bought steak or chops because they were convenient and they didn't have to worry about how to use up left-overs are now buying pieces of chicken for the same reasons. Butchers can't cut them up fast enough and are asking the poultry packers to do it for them. I know one poultry plant where fifteen girls are kept busy all day long cutting up chickens.

Small families, to whom a whole chicken always looked like a big investment, can buy a few pieces. They are so pleased with the idea they are telling all their friends. Some people still haven't waked up to what's going on. Others say it's a fad and won't last. But most people I've talked to think it's a sound idea, that it will not only last, but do more to increase the demand for chicken than any idea that has ever hit the poultry industry.

--Frank Priebe's Letter to Poultry Raisers, Sept. 1940.

----------oOo----------

A 1940 issue of a New England Poultry magazine contains an advertisement for Single Comb Rhode Island Red cage-bred chicks through artificial insemination. They state they are breeding the third generation of caged layers with yearly records of egg production of 215-312 eggs.

----------oOo----------